IN THE SPECIFICATION:

Please replace paragraphs 5 through 8 with the following paragraphs annotated with changes made.

[0005] For ideal linearity, an ADC transfer curve would look like a stair case that starts and stops in the correct locations and has steps that are uniform in width and height. A differential non-linearity (DNL) arises when the stair steps (representing particular conversion codes) are not the same widths. These stair widths may be a half-width too wide or too narrow based on a one half least significant bit (LSB) error in the conversion. A DNL also arises when a conversion code is erroneously skipped (a "missing code" where DNL equals -1 LSB) resulting in a double stair width. An integral non-linearity (INL) may be defined as a running summation of these various DNL errors. ~~resolution. Rademacher functions are sequential functions that may be employed in a priori model to provide transition-effect linearity errors associated with successive approximation ADCs. Rademacher functions accomplish this purpose by providing the locations of the major carry transitions associated with the successive approximation algorithm. However, Rademacher functions are not suited for pipeline ADCs, since their transition locations vary depending on a specific pipeline ADC design.~~

[0006] The capability to emulate linearity errors is valuable both as design and testing tools. Physical, empirical or *"a priori"* models may be used to provide this capability. A physical model usually requires the application of engineering judgement to approximate the performance of a device. This makes its application more difficult in all but simple applications. An empirical model typically requires the development of statistical data taken from actual devices. To be reliable, this data should be noise-free and taken from as large a sample space as possible.

A priori models are usually based on an investigative system employing a mathematical function. ~~Accordingly, what is needed in the art is a way to apply an a priori model in ascertaining linearity errors for an ADC having a pipeline structure. non-linearity (DNL) arises when the stair steps (representing particular conversion codes) are not the same widths. These stair widths may be a half-width too wide or too narrow based on a one half least significant bit (LSB) error in the conversion. A DNL also arises when a conversion code is erroneously skipped (a "missing code" where DNL equals -1 LSB) resulting in a double stair width. An integral non-linearity (INL) may be defined as a running summation of these various DNL errors.~~

[0007] A major transition is defined as a location in a converter design where a discontinuity may arise thereby affecting both DNL and INL directly. For example, the major transitions of a successive approximation ADC are always located in a predictable 2^n locations, where n is the number of bits defining its resolution. Rademacher functions are sequential functions that may be employed in an *a priori* model to provide transition-effect linearity errors associated with successive approximation ADCs. Rademacher functions accomplish this purpose by providing the locations of the major carry transitions associated with the successive approximation algorithm. However, the Rademacher functions are not suited for pipeline ADCs, since their transition locations vary depending on a specific pipeline ADC design. ~~The capability to emulate linearity errors is valuable both as design and testing tools. Physical, empirical or "a priori" models may be used to provide this capability. A physical model usually requires the application of engineering judgement to approximate the performance of a device. This makes its application more difficult in all but simple applications. An empirical model typically requires the development of statistical data taken from actual devices. To be reliable, this data should be noise-free and taken from as large a sample space as possible. A priori models are~~

~~usually based on an investigative system employing a mathematical function.~~

[0008] Accordingly, what is needed in the art is a way to apply an *a priori* model in ascertaining linearity errors for an ADC having a pipeline structure. ~~A major transition is defined as a location in a converter design where a discontinuity may arise thereby affecting both DNL and INL directly. For example, the major transitions of a successive approximation ADC are always located in a predictable 2^n locations, where n is the number of bits defining its~~